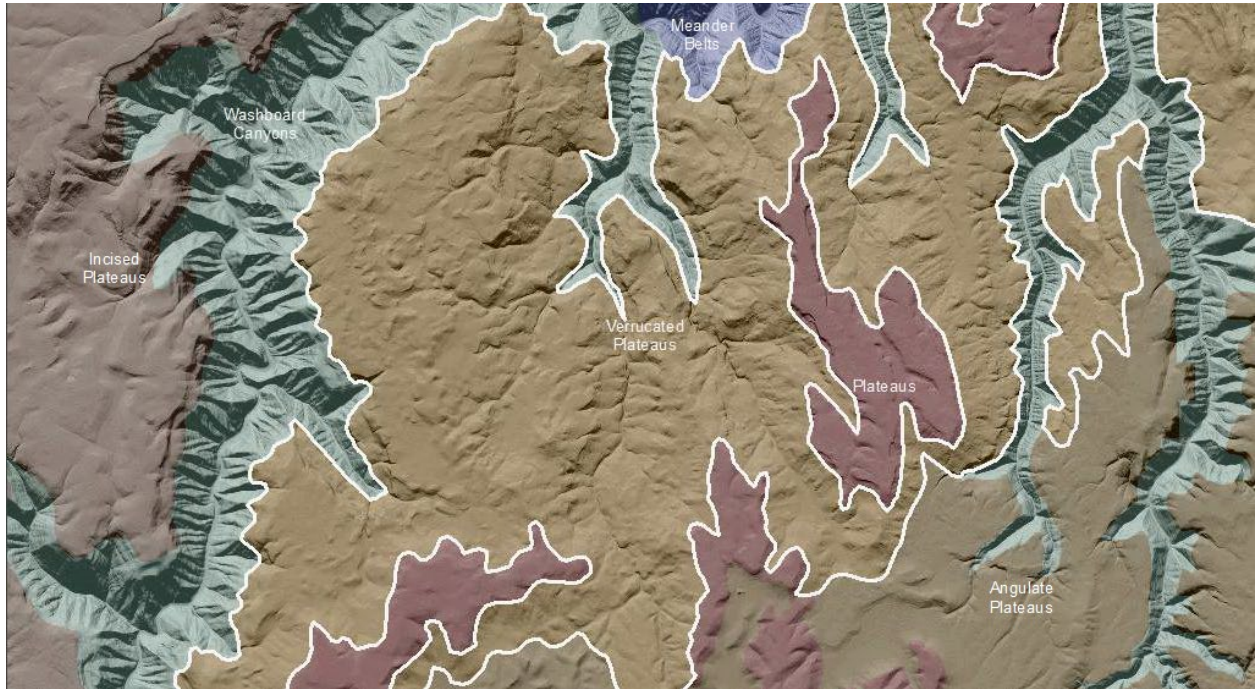


Blue Mountain Plateaus

Plateaus in the Pacific Northwest are predominantly underlain by stacked flows of the Columbia River Basalts and form extensive elevated plains bounded on one or more sides by steep slopes hundreds of feet above adjoining areas. Plateaus are differentiated from each other by the most-evident surficial processes of alteration.

Landform Association: Plateaus:



Plateaus The Columbia River and associated basalt flows constitute one of the largest flood basalt flows in the world. The basalt flows emanated from a series of fractures in the earth surface. Initially they created a broad, nearly level plateau up to 8000 to 9000 feet thick that covered an area of 77,000 square miles across eastern Oregon and southwest Washington (Orr and Orr, 2012). Much of the plateau is without a perennial source of water. Plateaus Landform Associations are the remnant unaltered or slightly weathered surface of those basalt flows.

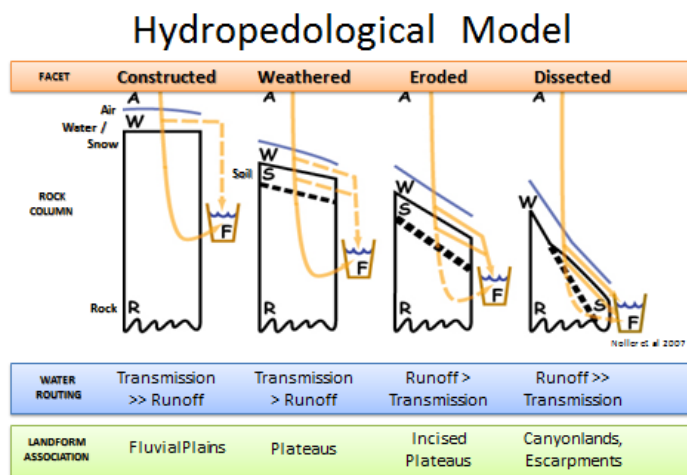


Figure 1: Noller depiction of landform relationships based on degree of weathering and erosion and runoff from the landscape.

Depending on stage of erosion, plateaus will manifest varying degrees of incision (Figure 1). Plateaus Landform Associations generally

transmit precipitation and snowmelt directly below ground through a series of fractures in the flow with little surface runoff. As the original basalt flow weathers, surface runoff increases. Surface soils of Plateaus are either residuum with scablands present or are covered by volcanic ash deposition. Plant species vary by depth and mixture of volcanic ash surfaces. Soil taxa include Mollisols and Andisols.

This Landform Association is rare on National Forest System Lands.

Landtype Associations: Landtype Associations are formed by intersecting vegetation series or groups of vegetation series with Landform Associations.

Topography:

The following tables represent the average conditions for the Landform Association. Only lands within and adjacent to National Forest System Lands were mapped by this project. The entire EPA Level III Ecoregion is not covered by this mapping.

The percent of Landform Association (% of LfA) in bold in the table below refers to the percent of the Ecoregion represented by that Landform Association. The (% of LfA) numbers not in bold in the table below refer to the percent of each Landtype Association within the Landform Association.

Landform Association/Landtype Association	% of LfA	Mean % Slope	Minimum Elevation (m)	Maximum Elevation (m)	Mean Elevation (m)	% Northerly Aspect (226° - 134°)	% Southerly Aspect (135° - 225°)
Plateaus	0.5%	16	1200	1416	1330	79%	21%
Plateaus, Douglas-Fir	64.7%	13	1217	1468	1385	85%	15%
Plateaus, Douglas-Fir - Ponderosa Pine	5.7%	16	1171	1386	1312	78%	22%
Plateaus, Grand Fir-White Fir	12.6%	14	1291	1446	1389	93%	7%
Plateaus, Grand Fir-White Fir - Douglas-Fir	2.4%	20	1301	1516	1442	85%	15%
Plateaus, Ponderosa Pine	4.7%	17	1130	1350	1260	57%	43%
Plateaus, Ponderosa Pine - Douglas-Fir	2.3%	20	1173	1390	1289	68%	32%
Plateaus, Ponderosa Pine - Grand Fir-White Fir	0.6%	21	1260	1479	1389	81%	19%
Plateaus, Western Juniper	7.1%	16	931	1228	1039	68%	32%

Climate:

Landform Association/Landtype Association	Mean Annual Precipitation (mm)	Mean Annual Temperature °C	AET/PET Ratio July, Aug, Sept
Plateaus	475	8	0.17
Plateaus, Douglas-Fir	489	7	0.18
Plateaus, Douglas-Fir - Ponderosa Pine	467	8	0.17
Plateaus, Grand Fir-White Fir	495	7	0.18
Plateaus, Grand Fir-White Fir - Douglas-Fir	485	7	0.20
Plateaus, Ponderosa Pine	466	8	0.18
Plateaus, Ponderosa Pine - Douglas-Fir	460	8	0.16
Plateaus, Ponderosa Pine - Grand Fir-White Fir	510	7	0.23
Plateaus, Western Juniper	382	9	0.09

The ratio of Actual Evapotranspiration to Potential Evapotranspiration (AET/PET) is used as a broad-scale indicator of potential drought stress. We obtained modeled actual and potential evapotranspiration datasets from the Numerical Terradynamic Simulation Group at the University of Montana (<http://www.ntsug.umt.edu/project/mod16>) for a 30 year climate average. AET/PET ratio in the table above is based on a scale of zero to one. A value closer to 1 means the vegetation is transpiring close to its potential. A value farther from 1 means that the Actual Evapotranspiration is below potential based on this climatic zone (Ringo, et. al. 2016 in draft).